

# Choose the Correct Answer:

1.	The S.S. of the equation : $x^2 = 9$ in $\mathbb{N}$ is .....	(a) $\emptyset$	(b) $\{-3\}$	(c) $\{3\}$	(d) $\{-3, 3\}$
2.	If $x^3 y^{-3} = 8$ , then $\frac{y}{x} = \dots\dots\dots$	(a) $\frac{1}{512}$	(b) $\frac{1}{8}$	(c) $\frac{1}{2}$	(d) 2
3.	The S.S. of the equation : $x^2 - x = 0$ is ..... where $x \in \mathbb{R}$	(a) $\{0\}$	(b) $\emptyset$	(c) $\{0, 1\}$	(d) $\{1\}$
4.	The S.S. of the equation : $x^2 - 5x + 6 = 0$ is ..... where $x \in \mathbb{R}$	(a) $\{1, 6\}$	(b) $\{-1, -6\}$	(c) $\{2, 3\}$	(d) $\{-3, -2\}$
5.	The solution set of the equation : $x^2 + 25 = 0$ in $\mathbb{R}$ is .....	(a) $\{-5, 5\}$	(b) $\{5\}$	(c) $\{-5\}$	(d) $\emptyset$
6.	If $\left(\frac{5}{3}\right)^x = \left(\frac{3}{5}\right)^2$ , then $x = \dots\dots\dots$	(a) -2	(b) 2	(c) $\frac{1}{2}$	(d) $-\frac{1}{2}$
7.	If $6^x = 7$ , then $6^{x+1} = \dots\dots\dots$	(a) 42	(b) $\frac{7}{6}$	(c) 1	(d) 6
8.	$4^3 + 4^3 + 4^3 + 4^3 = \dots\dots\dots$	(a) $4^{12}$	(b) $4^9$	(c) $4^4$	(d) $4^{81}$
9.	The solution set of equation : $x^2 - 5x + 4 = 0$ in $\mathbb{R}$ is .....	(a) $\{1, 4\}$	(b) $\{2, -2\}$	(c) $\emptyset$	(d) $\{1\}$
10.	$3^{\text{zero}} + 3^{-1} - \left(\frac{1}{\sqrt{3}}\right)^2 = \dots\dots\dots$	(a) 3	(b) 1	(c) $\frac{1}{3}$	(d) 0
11.	* If $x + y = 3$ , $x^2 - xy + y^2 = 5$ , then $x^3 + y^3 = \dots\dots\dots$	(a) 15	(b) 25	(c) 8	(d) 7
12.	If $(x-2)^0 = 1$ , then $x \neq \dots\dots\dots$	(a) 3	(b) 2	(c) 1	(d) -3
13.	If $5^x = 4$ , then $5^{x-1} = \dots\dots\dots$	(a) 1.25	(b) 0.8	(c) 0.125	(d) 0.08
14.	If $x = \frac{\sqrt{8}}{\sqrt{2}}$ , then $x^{-1} = \dots\dots\dots$	(a) 2	(b) -2	(c) $\frac{1}{2}$	(d) $-\frac{1}{2}$

15.  $\left(\frac{\sqrt{5}}{3}\right)^{-2} = \dots\dots\dots$   
 (a)  $\frac{9}{5}$  (b)  $-\frac{9}{5}$  (c)  $-\frac{5}{9}$  (d)  $\frac{5}{9}$
16. If  $3^x + 3^x + 3^x = 1$ , then  $x = \dots\dots\dots$   
 (a)  $-1$  (b)  $0$  (c)  $1$  (d)  $2$
17.  $2^{12} \times 3^{12} = \dots\dots\dots$   
 (a)  $6^2$  (b)  $6^4$  (c)  $6^{12}$  (d)  $6^{24}$
18.  $3^{-2}$  equals  $\dots\dots\dots$   
 (a)  $9$  (b)  $\frac{1}{9}$  (c)  $-\frac{1}{9}$  (d)  $-9$
19. If  $7^{x-3} = 5^{x-3}$ , then  $x = \dots\dots\dots$   
 (a)  $5$  (b)  $7$  (c)  $3$  (d)  $0$

**Complete:**

20. The solution set of the equation :  $x^2 - 1 = 8$ , where  $x \in \mathbb{Z}$  is  $\dots\dots\dots$
21. The S.S. of the equation :  $x^2 - 3 = 0$  in  $\mathbb{R}$   $\dots\dots\dots$
22.  $x^3 - \dots\dots\dots = (x - 2) ( \dots\dots\dots + 2x + 4 )$
23.  $(5x - 2y)(25x^2 + 10xy + 4y^2) = \dots\dots\dots$
24. The S.S. of the following equation :  $(x^2 + 3)(x^3 + 1) = 0$  in  $\mathbb{R}$  is  $\dots\dots\dots$
25.  $y^3 - 8 = ( \dots\dots\dots - \dots\dots\dots ) (x^2 + 2x + \dots\dots\dots)$
26.  $(a + b)x + (a + b)y = (a + \dots\dots\dots) ( \dots\dots\dots + \dots\dots\dots )$
27. Fifth the number  $5^{20}$  is  $\dots\dots\dots$
28. If  $3^x = 5$ , then  $(27)^x = \dots\dots\dots$
29. The solution set of the equation :  $x^2 + 1 = 0$  in  $\mathbb{R}$  is  $\dots\dots\dots$
30. If  $x + y = 7$  and  $a - 2b = 4$ , then the numerical value of the expression :  
 $a(x + y) - 2b(x + y) = \dots\dots\dots$
31. If  $\left(\frac{2}{3}\right)^x = \frac{27}{8}$ , then  $x = \dots\dots\dots$
32. If  $x^3 y^{-3} = 8$ , then  $\frac{y}{x} = \dots\dots\dots$
33. If  $5^{x-2} = 1$ , then  $x = \dots\dots\dots$

34. The S.S. of the equation :  $x^2 - 16 = 0$  in  $\mathbb{R}$  is .....
35. The number  $(\sqrt{2})^{-4}$  in simplest form is .....
36. If  $x = (\sqrt{5} - 2)^7$  and  $y = (\sqrt{5} + 2)^7$ , then  $xy =$  .....
37. If  $x = 3$  is a solution of the equation :  $x^2 + 2x + k = 0$ , then  $k =$  .....
38. The solution set of the equation :  $x^2 + 4 = 0$  in  $\mathbb{R}$  is .....
39. If  $3^{x-2} = 27$ , then  $x =$  .....
40.  $(\frac{3}{5})^x = \frac{27}{125}$ , then  $x =$  .....
41. If  $3^x = 81$ , then  $x =$  .....
42. The age of a man now  $x$  years, then his age 7 years ago is ..... years.

**Choose the Correct Answer:**

43. A rhombus whose diagonals lengths are 6 cm. , 10 cm. has area .....  $\text{cm}^2$   
(a) 60 (b) 30 (c) 15 (d) 10
44. The ratio between the lengths of two corresponding sides of two similar polygons is 3 : 5 , then the ratio between their perimeters is .....  
(a) 2 : 5 (b) 5 : 3 (c) 3 : 5 (d) 1 : 2
45. If the area of a trapezium is  $100 \text{ cm}^2$  and its height is 5 cm. , then the length of its middle base = ..... cm.  
(a) 20 (b) 30 (c) 40 (d) 50
46. If two polygons are similar and the ratio between the lengths of two corresponding sides is 1 : 3 and the perimeter of the smaller polygon is 15 cm. , then the perimeter of the greater polygon is ..... cm.  
(a) 30 (b) 45 (c) 60 (d) 75
47. A square of perimeter 20 cm. , then its area equals .....  $\text{cm}^2$   
(a) 20 (b) 25 (c) 50 (d) 100
48. All ..... are similar.  
(a) squares (b) triangles (c) rectangles (d) parallelograms
49. A square of diagonal length 12 cm. , then its area = .....  $\text{cm}^2$   
(a) 24 (b) 36 (c) 48 (d) 72

50.	If $\Delta ABC \sim \Delta XYZ$ , $m(\angle B) = 50^\circ$ , then $m(\angle Y) = \dots\dots\dots$ (a) $30^\circ$ (b) $40^\circ$ (c) $50^\circ$ (d) $60^\circ$
51.	If the ratio between the length of two corresponding sides in two similar triangles is equal to 1 , then the two triangles are ..... (a) congruent. (b) different. (c) parallel. (d) otherwise.
52.	If the ratio of enlargement between two similar triangles equals ..... , then the two triangles are congruent. (a) 1 (b) 2 (c) 0.5 (d) 0.25
53.	If $\Delta ABC \sim \Delta DEO$ , $AB = \frac{1}{3} DE$ , then the perimeter of $\Delta ABC$ equals ..... the perimeter of $\Delta DEO$ (a) $\frac{1}{3}$ (b) $\frac{1}{2}$ (c) 3 (d) 9
54.	Trapezium of length of its middle base 8 cm. and surface area $56 \text{ cm}^2$ , then its height = ..... cm. (a) 32 (b) 24 (c) 448 (d) 7
55.	The area of the trapezium whose middle bases 7 cm. , and height 6 cm. = ..... $\text{cm}^2$ (a) 21 (b) 42 (c) 40 (d) 13
<b>Complete:</b>	
56.	A trapezium whose bases lengths are 8 cm. , 10 cm. and its height is 5 cm. , then its area equals ..... $\text{cm}^2$
57.	The two polygons are similar if their corresponding sides are ..... and their corresponding angles are .....
58.	The area of a rhombus is $24 \text{ cm}^2$ , the length of one of its diagonals is 8 cm. , then the length of the other diagonal is .....
59.	The square whose length of its diagonal 8 cm. , then its area = ..... $\text{cm}^2$
60.	If $\Delta ABC \sim \Delta XYZ$ , $m(\angle A) + m(\angle B) = 60^\circ$ , then $m(\angle Z) = \dots\dots\dots$
61.	The area of the trapezium whose parallel bases 6 cm. , 10 cm. and height 5 cm. equals .....
62.	The two polygons are similar to a third are .....
63.	The area of rhombus whose perimeter is 20 cm. and height 4 cm. = .....
64.	The diagonal of a square whose area $50 \text{ cm}^2$ equals ..... cm.
65.	A square of diagonal length 12 cm. , then its area = ..... $\text{cm}^2$

## Choose the Correct Answer:

1. The S.S. of the equation :  $x^2 = 9$  in  $\mathbb{N}$  is .....  
 (a)  $\emptyset$  (b)  $\{-3\}$  (c)  $\{3\}$  (d)  $\{-3, 3\}$
2. If  $x^3 y^{-3} = 8$ , then  $\frac{y}{x} = \dots\dots\dots$   
 (a)  $\frac{1}{512}$  (b)  $\frac{1}{8}$  (c)  $\frac{1}{2}$  (d) 2
3. The S.S. of the equation :  $x^2 - x = 0$  is ..... where  $x \in \mathbb{R}$   
 (a)  $\{0\}$  (b)  $\emptyset$  (c)  $\{0, 1\}$  (d)  $\{1\}$
4. The S.S. of the equation :  $x^2 - 5x + 6 = 0$  is ..... where  $x \in \mathbb{R}$   
 (a)  $\{1, 6\}$  (b)  $\{-1, -6\}$  (c)  $\{2, 3\}$  (d)  $\{-3, -2\}$
5. The solution set of the equation :  $x^2 + 25 = 0$  in  $\mathbb{R}$  is .....  
 (a)  $\{-5, 5\}$  (b)  $\{5\}$  (c)  $\{-5\}$  (d)  $\emptyset$
6. If  $\left(\frac{5}{3}\right)^x = \left(\frac{3}{5}\right)^2$ , then  $x = \dots\dots\dots$   
 (a) -2 (b) 2 (c)  $\frac{1}{2}$  (d)  $-\frac{1}{2}$
7. If  $6^x = 7$ , then  $6^{x+1} = \dots\dots\dots$   
 (a) 42 (b)  $\frac{7}{6}$  (c) 1 (d) 6
8.  $4^3 + 4^3 + 4^3 + 4^3 = \dots\dots\dots$   
 (a)  $4^{12}$  (b)  $4^9$  (c)  $4^4$  (d)  $4^{81}$
9. The solution set of equation :  $x^2 - 5x + 4 = 0$  in  $\mathbb{R}$  is .....  
 (a)  $\{1, 4\}$  (b)  $\{2, -2\}$  (c)  $\emptyset$  (d)  $\{1\}$
10.  $3^{\text{zero}} + 3^{-1} - \left(\frac{1}{\sqrt{3}}\right)^2 = \dots\dots\dots$   
 (a) 3 (b) 1 (c)  $\frac{1}{3}$  (d) 0
11. \* If  $x + y = 3$ ,  $x^2 - xy + y^2 = 5$ , then  $x^3 + y^3 = \dots\dots\dots$   
 (a) 15 (b) 25 (c) 8 (d) 7
12. If  $(x-2)^0 = 1$ , then  $x \neq \dots\dots\dots$   
 (a) 3 (b) 2 (c) 1 (d) -3
13. If  $5^x = 4$ , then  $5^{x-1} = \dots\dots\dots$   
 (a) 1.25 (b) 0.8 (c) 0.125 (d) 0.08
14. If  $x = \frac{\sqrt{8}}{\sqrt{2}}$ , then  $x^{-1} = \dots\dots\dots$   
 (a) 2 (b) -2 (c)  $\frac{1}{2}$  (d)  $-\frac{1}{2}$

15.  $\left(\frac{\sqrt{5}}{3}\right)^{-2} = \dots\dots\dots$   
(a)  $-\frac{9}{5}$  (b)  $-\frac{9}{5}$  (c)  $-\frac{5}{9}$  (d)  $\frac{5}{9}$
16. If  $3^x + 3^x + 3^x = 1$ , then  $x = \dots\dots\dots$   
(a)  $-1$  (b)  $0$  (c)  $1$  (d)  $2$
17.  $2^{12} \times 3^{12} = \dots\dots\dots$   
(a)  $6^2$  (b)  $6^4$  (c)  $6^{12}$  (d)  $6^{24}$
18.  $3^{-2}$  equals  $\dots\dots\dots$   
(a)  $9$  (b)  $\frac{1}{9}$  (c)  $-\frac{1}{9}$  (d)  $-9$
19. If  $7^{x-3} = 5^{x-3}$ , then  $x = \dots\dots\dots$   
(a)  $5$  (b)  $7$  (c)  $3$  (d)  $0$

**Complete:**

20. The solution set of the equation :  $x^2 - 1 = 8$ , where  $x \in \mathbb{Z}$  is  $\dots\dots\dots \{3, -3\}$
21. The S.S. of the equation :  $x^2 - 3 = 0$  in  $\mathbb{R}$   $\dots\dots\dots \{\pm\sqrt{3}\}$
22.  $x^3 - \dots\dots\dots 8 \dots\dots\dots = (x - 2) (\dots\dots\dots x^2 \dots\dots\dots + 2x + 4)$
23.  $(5x - 2y)(25x^2 + 10xy + 4y^2) = \dots\dots\dots 125x^3 - 8y^3$
24. The S.S. of the following equation :  $(x^2 + 3)(x^3 + 1) = 0$  in  $\mathbb{R}$  is  $\dots\dots\dots \{-1, i, -i\}$
25.  $x^3 - 8 = (\dots\dots\dots x \dots\dots\dots - \dots\dots\dots 2 \dots\dots\dots) (x^2 + 2x + \dots\dots\dots 4 \dots\dots\dots)$
26.  $(a + b)x + (a + b)y = (a + \dots\dots\dots b \dots\dots\dots) (\dots\dots\dots x \dots\dots\dots + \dots\dots\dots y \dots\dots\dots)$
27. Fifth the number  $5^{20}$  is  $\dots\dots\dots 5^{19}$
28. If  $3^x = 5$ , then  $(27)^x = \dots\dots\dots 125$
29. The solution set of the equation :  $x^2 + 1 = 0$  in  $\mathbb{R}$  is  $\dots\dots\dots \emptyset$
30. If  $x + y = 7$  and  $a - 2b = 4$ , then the numerical value of the expression :  
 $a(x + y) - 2b(x + y) = \dots\dots\dots 28$
31. If  $\left(\frac{2}{3}\right)^x = \frac{27}{8}$ , then  $x = \dots\dots\dots -3$
32. If  $x^3 y^{-3} = 8$ , then  $\frac{y}{x} = \dots\dots\dots \frac{1}{2}$
33. If  $5^{x-2} = 1$ , then  $x = \dots\dots\dots 2$

34. The S.S. of the equation :  $x^2 - 16 = 0$  in  $\mathbb{R}$  is  $\{\pm 4\}$
35. The number  $(\sqrt{2})^{-4}$  in simplest form is  $\frac{1}{4}$
36. If  $x = (\sqrt{5} - 2)^7$  and  $y = (\sqrt{5} + 2)^7$ , then  $xy = 1$
37. If  $x = 3$  is a solution of the equation :  $x^2 + 2x + k = 0$ , then  $k = -15$
38. The solution set of the equation :  $x^2 + 4 = 0$  in  $\mathbb{R}$  is  $\emptyset$
39. If  $3^{x-2} = 27$ , then  $x = 5$
40.  $(\frac{3}{5})^x = \frac{27}{125}$ , then  $x = -3$
41. If  $3^x = 81$ , then  $x = 4$
42. The age of a man now  $x$  years, then his age 7 years ago is  $x - 7$  years.

**Choose the Correct Answer:**

43. A rhombus whose diagonals lengths are 6 cm. , 10 cm. has area .....  $\text{cm}^2$   
(a) 60 (b) 30 (c) 15 (d) 10
44. The ratio between the lengths of two corresponding sides of two similar polygons is 3 : 5 , then the ratio between their perimeters is .....  
(a) 2 : 5 (b) 5 : 3 (c) 3 : 5 (d) 1 : 2
45. If the area of a trapezium is  $100 \text{ cm}^2$  and its height is 5 cm. , then the length of its middle base = ..... cm.  
(a) 20 (b) 30 (c) 40 (d) 50
46. If two polygons are similar and the ratio between the lengths of two corresponding sides is 1 : 3 and the perimeter of the smaller polygon is 15 cm. , then the perimeter of the greater polygon is ..... cm.  
(a) 30 (b) 45 (c) 60 (d) 75
47. A square of perimeter 20 cm. , then its area equals .....  $\text{cm}^2$   
(a) 20 (b) 25 (c) 50 (d) 100
48. All ..... are similar.  
(a) squares (b) triangles (c) rectangles (d) parallelograms
49. A square of diagonal length 12 cm. , then its area = .....  $\text{cm}^2$   
(a) 24 (b) 36 (c) 48 (d) 72



50. If  $\Delta ABC \sim \Delta XYZ$ ,  $m(\angle B) = 50^\circ$ , then  $m(\angle Y) = \dots\dots\dots$   
(a)  $30^\circ$  (b)  $40^\circ$  (c)  $50^\circ$  (d)  $60^\circ$
51. If the ratio between the length of two corresponding sides in two similar triangles is equal to 1, then the two triangles are .....  
(a) congruent. (b) different. (c) parallel. (d) otherwise.
52. If the ratio of enlargement between two similar triangles equals .....  
, then the two triangles are congruent.  
(a) 1 (b) 2 (c) 0.5 (d) 0.25
53. If  $\Delta ABC \sim \Delta DEO$ ,  $AB = \frac{1}{3} DE$ , then the perimeter of  $\Delta ABC$  equals ..... the perimeter of  $\Delta DEO$   
(a)  $\frac{1}{3}$  (b)  $\frac{1}{2}$  (c) 3 (d) 9
54. Trapezium of length of its middle base 8 cm. and surface area  $56 \text{ cm}^2$ ,  
then its height = ..... cm.  
(a) 32 (b) 24 (c) 448 (d) 7
55. The area of the trapezium whose middle bases 7 cm., and height 6 cm. = .....  $\text{cm}^2$   
(a) 21 (b) 42 (c) 40 (d) 13
- Complete:**
56. A trapezium whose bases lengths are 8 cm., 10 cm. and its height is 5 cm., then its area equals .....  $\text{cm}^2$
57. The two polygons are similar if their corresponding sides are ..... and their corresponding angles are .....  
*Proportional*
58. The area of a rhombus is  $24 \text{ cm}^2$ , the length of one of its diagonals is 8 cm., then the length of the other diagonal is ..... cm
59. The square whose length of its diagonal 8 cm., then its area = .....  $\text{cm}^2$
60. If  $\Delta ABC \sim \Delta XYZ$ ,  $m(\angle A) + m(\angle B) = 60^\circ$ , then  $m(\angle Z) = \dots\dots\dots$
61. The area of the trapezium whose parallel bases 6 cm., 10 cm. and height 5 cm. equals .....  $\text{cm}^2$
62. The two polygons are similar to a third are .....  
*similar*
63. The area of rhombus whose perimeter is 20 cm. and height 4 cm. = .....  $\text{cm}^2$
64. The diagonal of a square whose area  $50 \text{ cm}^2$  equals ..... cm.
65. A square of diagonal length 12 cm., then its area = .....  $\text{cm}^2$